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Medical Bulletin

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For FAA Aviation Medical Examiners, Office of Aviation Medicine Personnel, Flight Standards Inspectors, and Other Aviation Professionals.

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Winter1999

U.S. Department of Transportation
Federal Aviation Administration

Former Boeing Medical Director New OAM Deputy

Federal Air Surgeon Dr. **Jon Jordan** announced the appointment of **Frederick E. Tilton**, MD, MPH, as the new Deputy Federal Air Surgeon, filling the position left vacant by the retirement of Dr. **William H. Hark** last summer.

Dr. Fred Tilton

According to Dr. Jordan, "Dr. Tilton has exactly the background of experience and expertise we have been seeking to fill the deputy position." The selection was "made more difficult because of the nubmer of highly-qualified people who applied," he said.

From 1991 to 1999, Dr. Tilton directed the Boeing Corporation's medical program. This organization is responsible for on-site occupational care of Boeing employees working in the United States, and for management of the care provided to employees and their dependents assigned overseas. In 1998 his department received the American College of Occupational Medicine's prestigious Corporate Health Achievement award as one of the best industrial medicine programs in the country.

Prior to this, he was the Regional Medical Director at Boeing's Wichita, Kan., facility.

A graduate of the US Military Academy, Tilton entered the US Air Force in 1962. His military career included operational time as a pilot and 11 years in the medical corps, where he commanded a clinic, functioned as an F-15 physician/pilot technical consultant, and held key executive positions, including that of Chief of Flight Medicine in the Surgeon General's Office. After a career that spanned 26 years, he retired in 1988 with the rank of colonel.

Tilton received both an MS and MD degree from the University of New Mexico and an MPH from the University of Texas. He is board-certified by the American Board of Preventive Medicine in Aerospace Medicine and Occupational Medicine. Among his professional affiliations, he is a Fellow in the Aerospace Medical Association and the American College of Preventive Medicine.

Referring to his new position, Tilton says, "I am very excited about this appointment. It gives me a great opportunity to use all of my aviation, medical, and management experience to help a superb organization get even better."

Tilton is married; he and his wife and children plan to settle in the Northern Virginia area.

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Best Wishes for a Happy and Prosperous New Year

AMCS HOLDOUTS

There are still significant numbers of aviation medical examiners who have not yet converted to the Internet-based Airman Medical Certification System(AMCS) and are still sending in hard-copy examinations. From October 25 until November 19, this amounted to nearly 9,000 examinations. This **will** cause delays in medical certification, since there are more data fields to key in, and it takes longer to input the exams to the AMCS.

The new system improves and simplifies the processing of airman medical data while reducing clerical errors and delays.

For information about how to access the system via the Internet, call the Airman Medical Certification System Hotline at 405) 954-3238.

HEADS UP

The Federal Air Surgeon's Column

Changing to Meet the Challenge

THE STRENGTH OF ANY ORGANIZATION is dependent on the quality (and sometimes the quantity) of its people. In my memory, quantity has always been a problem for the Office of Aviation Medicine, especially in light of the scope of our responsibilities and the tasks we must accomplish.

In the last issue of the *Federal Air Surgeon's Medical Bulletin,* I wrote about the vagaries of our budget process, the impact that insufficient funding and staffing have on our ability to accomplish our objectives, and the need to take advantage of evolving technology to meet our obligations. In this respect, FAA Administrator **Jane Garvey** recently described how the agency and its people have always responded to dynamic challenges, saying she is "confident that the agency will meet these challenging times with the same kind of professionalism and commitment as it did in the past" (see excerpts on page 5). In connection with the Administrator's comments, one thing I failed to address in that column is the concentrated efforts we have made to maintain and enhance the quality and professionalism of the staff of the Office of Aviation Medicine.

Building and maintaining a quality staff in an organization that operates in the government sector is not easy. In addition to funding and staffing limitations, cumbersome and protracted recruitment procedures, complex personnel management rules, and limitations on pay and other employment incentives have all played a role. I have been somewhat surprised that, in spite of these limitations, the Office of Aviation Medicine has been able to build the quality staff that now exists – beginning with our entry-level clerk-typists all the way through our top management.

We have lost some extremely valuable people over the years through retirements, illnesses, and occasionally deaths, and some folks have simply moved on to "greener pastures." In most of these instances, however, we have had the good fortune of being able to replace those people with others of equivalent and sometimes better skills and knowledge.

From an overall perspective, I think we have an excellent staff throughout the entire medical program. This has not occurred through happenstance. It has occurred through a dedicated effort to locate, recruit, and hire the best and brightest candidates we could find.

In the Summer 1999 issue of the *Federal Air Surgeon's Medial Bulletin,* we announced the retirement of the Deputy Federal Air Surgeon, Dr. **William H. Hark**. My column in that issue reflected on the importance of the contributions Bill had made to the programs of the Office of Aviation Medicine and the influence he had on me, personally. Indeed, I was apprehensive about being able to find a replacement for Bill as someone who might possess equal dedication and expertise.

Jon L. Jordan, MD, JD

I was pleased when we received applications from 19 candidates, from both inside and outside government, many of whom were highly qualified. I was even more pleased when, following interviews of the best qualified candidates, Dr. **Fred Tilton** accepted my invitation to become the next Deputy Federal Air Surgeon.

With Fred now a member of the Office of Aviation Medicine team, I look forward with even greater positive anticipation to the challenges that face us in the future. With our continuing need to improve all facets of the agency's medical programs, I anticipate that Fred's educational achievements; his aeromedical and occupational health experience —both inside and outside government—and his recognized professionalism will serve the agency and the rest of the aviation community quite well.

Welcome aboard, Fred!

JLJ

Federal Air Surgeon's Medical Bulletin

Secretary of Transportation
Rodney E. Slater

FAA Administrator
Jane F. Garvey

Federal Air Surgeon
Jon L. Jordan, MD, JD

Editor
Michael E. Wayda

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Chronic Fatigue Syndrome and the Aviator

Michael Feinberg, MD, MSPH

Abstract: Chronic fatigue and immune dysfunction syndrome (CFIDS) is a serious and complex illness that affects many different body systems. It is characterized by incapacitating fatigue (experienced as profound exhaustion and extremely poor stamina), neurological problems and numerous other symptoms. CFIDS can be severely debilitating and can last for many years. CFIDS is often misdiagnosed because it is frequently unrecognized and can resemble other disorders including mononucleosis, multiple sclerosis, fibromyalgia, Lyme disease, post-polio syndrome, and autoimmune diseases such as lupus. CFIDS is also known as chronic fatigue syndrome and myalgic encephalomyelitis.

CHRONIC FATIGUE SYNDROME and immune dysfunction syndrome (CFIDS) is a baffling condition whose etiology is still unclear. Due to the general characteristics of this disease it would be preferable for an aviation medical examiner to defer the application of an airman afflicted with CFIDS to the Aeromedical Certification Division.

Etiology

Several theories abound, ranging from a single virus, possibly in the herpes simplex or cytomegalovirus family, mixed infections with several pathogens, or even environmental pollutants and contaminants.

Symptoms

Onset of CFIDS is abrupt in most cases, and people afflicted seem to make a reasonable recovery within three to five years. This disorder is debilitating, with fatigue that does not resolve with bed rest, and is typically accompanied by these characteristics: chronic low grade fever, throat infections, muscle weakness, gastrointestinal and sleep disturbances, fogginess, vertigo, and lymph node enlargement (usually in the cervical and axillary regions). According to the official Center for Disease Control standard for this disorder, a person suspected of having CFIDS must satisfy these two criteria:

- have severe chronic fatigue of six months or longer duration, with other known medical conditions excluded by clinical diagnosis, and
- concurrently have four or more of the following symptoms: substantial impairment in short-term memory or concentration; sore throat; tender lymph nodes; muscle pain; multi-joint pain without swelling or redness; headaches of a new type, pattern or severity; unrefreshing sleep; and post-exertional malaise lasting more than 24 hours. The symptoms must have persisted or recurred during six or more consecutive months of illness and must not have predated the fatigue.

Aeromedical Certification Issues

There are two issues to consider, either of which may be disqualifying. First, the condition itself, and second, the medications used to partially suppress the symptoms. While the *Guide for Aviation Medical Examiners* (1999) does not directly address this syndrome, it comments on pieces of it independently. For example, musculoskeletal disorders are fairly common; muscle weakness and pain are usually present. The *Guide* states that "…disturbances of musculoskeletal function, congenital or acquired, sufficient to interfere with the performance of airman duties…" are disqualifying (page 58). Headache is also common with this disorder. The *Guide* states that "The examiner may issue a medical certificate to an applicant with a long standing history of headaches if mild, seldom requiring more than simple analgesics, occur infrequently, and are not incapacitating, and are not associated with neurological stigmata" (page 63).

Medications

Chronic fatigue and immune dysfunction syndrome should be handled in a manner appropriate to the individual's symptoms. However, the medications used to suppress CFIDS are disqualifying. These include (but are not limited to) Elavil, Desyrel, Ambiens, Klonopin, Soma, Flexeril, Paxil, Zoloft, and Prozac. Essentially, these are all medications that can affect the central nervous system. Alternative remedies such as melatonin, valerian root, passionflower, chamomile—provided they do not cause an airman sedation—would be compatible with aeromedical certification.

Prospects for Certification

Assuming that an airman has made a reasonable recovery from the initial onslaught of CFIDS (and is not taking any of the medications mentioned above), certification should be assured, with annual reports sent to the Aeromedical Certification Division for review.

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Dr. Feinberg is a medical officer in CAMI's Aeromedical Certification Division.

Previously Reported, No Change: Aeromedical Implications of Laymen Misdiagnosis

Capt. Donato J. Borrillo, MD, JD

Abstract: This article stresses the importance of verifying a "layman diagnosis" of asthma, migraine, kidney stone, or sinusitis. Failure to do so by the aviation medical examiner (AME) may result in a perpetual layman misdiagnosis, by the doctrine of "previously reported, no change." Steps that an AME may take to prevent misdiagnosis are discussed.

Only an accurate diagnosis should be recorded on the FAA Form 8500-8, with the ultimate responsibility of proper documentation resting squarely upon the aviation medical examiner (AME). This article addresses the importance of verifying a "layman diagnosis." Failure to do so may result in perpetual layman misdiagnosis, by the doctrine of "previously reported, no change."

For example, a layman misdiagnosis of *asthma, migraine, kidney stone* or *sinusitis* finds its way into the airman's medical record. Without assignment of error, the airman is encouraged to answer question 18 of the newly revised FAA Form 8500-8 "Have you ever in your life been diagnosed with…?" The "instructions for completion" encourage the applicant to "describe the condition" and give an approximate date for the illness. The key to the problem is *description,* not *diagnosis*.

Early in our medical training, we physicians learned Dr. Chevalier Jackson's (1865-1958) doctrine— "all that wheezes is not asthma." Unfortunately, the general population equates wheezing and asthma without distinction. The AME should carefully review an airman's medical history as "explained" and scrutinize the medications section (17a) for bronchodilator use and frequency. The physical examination section should include a thorough cardiopulmonary exam, with abnormal lung findings (Section 35) annotated. In addition, block 59 provides for "other tests," which should include pulmonary function testing. Finally, block 60 should reflect whether a diagnosis of asthma has been supported or disproved. The importance of ruling out a layman misdiagnosis of asthma, at the earliest possible date, cannot be overstated with regard to future military or airline transport operations. In other words, a misdiagnosis produces a "label" that has the potential to ground a pilot's flying career before it can even take off.

In the 1700s, Dr. William Heberden wrote in his *Commentary on the History and Care of Disease* that "the hemicrania, or pain of one-half of the head, is distinguished from other headaches." Layman often misdiagnose simple tension headaches as *migraine headaches*. As medical care providers, AMEs should realize that headaches have many etiologies and variations. Again, a properly documented history and neurologic examination (block 46) is important. A neurological consult, with findings annotated in block 60, should also be considered.

Both layman and practitioners often misdiagnose kidney stones. The AME should be reminded that, unless documented by the capture of a strained stone or visualized by excretory urogram (IVP), a diagnosis of nephrolithiasis is presumptive. The history, as annotated in blocks 59 and 60, should reflect a proper work-up before a definitive diagnosis is made.

Finally, we often forget that the gold standard for diagnosing "sinusitis" is by radiograph (CT and/or sinus films). Although not listed on Section 18 as "significant medical history," *sinusitis,* as misdiagnosed by laymen, does have an aeromedical significance. To the layman, sinusitis may be difficult to distinguish from a viral respiratory infection, the common cold, and viral or allergic rhinitis. Recurrent episodes of "layman sinusitis" can easily result in the misdiagnosis of chronic sinusitis, which has very significant aeromedical ramifications. For these reasons, the instructions to block 18 specifically inform the airman: "Do not report occasional common illnesses such as colds or sore throats." The AME should document in block 60 any misdiagnosis of frequent sinusitis.

In summary, the AME must ensure an accurate diagnosis, since airmen are encouraged to report all or any history of "perceived" disease in their past. A pilot's career is dependent upon whether or not her/his AME gets it right the first time, otherwise a misdiagnosis will be perpetuated as "previously reported, no change."

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18. Medical History - HAVE YOU EVER IN YOUR LIFE BEEN DIAGNOSED WITH, HAD, OR DO YOU PRESENTLY HAVE ANY OF THE FOLLOWING? Answer "yes" or "no" for every condition listed below. In the EXPLANATIONS box below, you may note 'PREVIOUSLY REPORTED, NO CHANGE' only if the explanation of the condition was recorded on a previous application for an airman medical certificate and there has been no change in your condition. **See instructions Page**

Yes	No	Condition	Yes	No	Condition	Yes	No	Condition	Yes	No	Condition

Dr. Borrillo is the Chief of Flight Medicine, 352nd Operations Support Squadron, USAF Special Operations Command, Royal Air Force Base, Mildenhall, England. He is Board certified in Aerospace Medicine. In addition, he is a commercial pilot, an AME, and a practicing attorney.

Letters to the Editor

How is the new Internet-based Airman Medical Certification System working? Here is a letter from a long-time aviation medical examiner who had a few problems with his equipment, but the outcome was, well, you decide…—Editor

Dear Editor: I finally got my computers working—the main problem was getting the 128-bit encryption installed. I think it is a great idea. The 9-character alphanumeric login and same for password should drive even the most sophisticated hacker up the wall. I was late entering the system because my password was lost by a (?) disgruntled, confused new hire (now gone) who put all my mail for one week in the back of the desk. I got a new password issued , and now all is working fine. At first, I had trouble with O,0,I, and 1 [oh, zero, I, and one]. Now I know that zero and one are not used.

Also, our computer guru goofed around for a month networking our computers and putting more horsepower into our machine that we use for the new system. Finally got them over on Sunday, and was there with them until everything was just right. They did everything, but did not change the encryption. I was glad I was there to oversee all the work and tell them that the 40-bit we had just would not do the job. The people are intelligent, but have no self-discipline about meeting schedules and appointments.

[I} did 12 FAA physicals—including two EKGs—yesterday. A drawer was accumulating with untransmitted 8500-8 forms, so I am greatly relieved to have everything slick and operating. My home computer is also hooked up. Thursday I am getting the blazing-speed modem hookup to our cable company. Costs about 30 bucks a month, plus new modem and installation fee. But, I could have washed my car in the time it took for some URLs to come up. POL-NET takes minutes from the start until the home page is ready.

We also bought a superb Burdick EKG machine that transmits, stores 30 records, and interprets. Storage is a must, because if the line is busy at CAMI and we have two EKGs in a row, the first one has to be deleted. Now Mario [office manager] can send them all at once on his lunch break.

Best regards,
Dr. Glenn Stoutt, Jr., Louisville, Ky.

Aviation's Success

Excerpts from the FAA Administrator's Holiday Message to Employees

As 1999 ebbs away and we begin a new millennium, the tendency to reflect back and look ahead is stronger than usual at this time of year. We have all been inundated with lists of the most important people and events over the past century or millennium as well as predictions of what the future holds in store for us.

Certainly, aviation was one of the most important achievements of the 20th century and would also make many lists of major millennial achievements. It's amazing to reflect on how far aviation has come in less than 100 years.

We must never forget that FAA and its predecessor agencies have been a major factor in aviation's success. It has helped make the United States the unquestioned leader in aviation around the globe and a major factor in the global economy.

One of the things I have observed since coming to the agency over two years ago is a sense of this proud tradition. What this agency does matters. The countless decisions, large and small, that you make every day affect the lives of hundreds of thousands of people. Since its beginnings in 1926 as a small bureau in the Department of Commerce, the FAA has been through a number of major transitions in an effort to adapt to changing times, new technology, and evolving needs of the industry it serves. The record shows we have always come through these times stronger and better able to meet the challenges. Today, we are again going through one of these major transitions, perhaps unprecedented in the history of the agency because of the convergence of forces that require us to change on so many fronts at once - from technology to the fundamental way we conduct our business. Like all previous major changes, it is not easy. Yet, I am confident that the agency will meet these challenging times with the same kind of professionalism and commitment as it did in the past.

Jane F. Garvey

Meetings Calendar

Upcoming International Events of Interest for 2000

January 27-30, Newport Beach, Calif. Annual Medicine Meets Virtual Reality Conference. Info: Aligned Management Associates, Inc., P.O. Box 23220, San Diego, CA 92193; Phone: (860) 447-9767; FAX: (860) 444-0362; E-mail: westwood@uconect.net

Feb. 28 – Mar. 2, Albuquerque, N.M. Space 2000 and Robotics 2000 International Conferences. Info: Steward Johnson; Phone: (505) 298-2124; E-mail: StWJohnson@aol.com

March 6-8, Amsterdam, Netherlands. Annual European Aviation Safety Seminar. Info: Flight Safety Foundation, Suite 300, 601 Madison Street, Alexandria VA 22314; Phone: (703) 739-6700, ext. 11; FAX: (703) 739-6708; E-mail: Joanne-Anderson @msn.com; Web site: <www.flightsafety.org>

May 14-18, Houston, Texas Annual Scientific Meeting of the Aerospace Medical Association. Info: AsMA, 320 S. Henry Street, Alexandria, VA 22314-3579; Phone: (703) 739-2240; FAX: (703) 739-9652; Web site: <www.asma.org>

May 20-26, Santorini, Greece Humans in Space Symposium. Sponsored by the Greek Aerospace Medical Association. Web site: <www.med.auth.gr/conf/gasma/eng>

May 23-26, Vicenza, Italy International Course on Peritoneal Dialysis. Info: Dr. M. Feriani, General Secretariat, Dept. of Nephrology, St. Bartolo Hospital, 36100 Vicenza, Italy; E-mail: mferiani@goldnet.it

July 30-August 4, San Diego, Calif. Triennial Congress and Human Factors and Ergonomics Society 44th Annual Meeting. Info: HIFES, P.O. Box 1369, Santa Monica, CA 90406-1369; Phone: (310) 394-1811; FAX: (310) 394-2410; E-mail: hfes@compuserve.com; Web site: <www.hfes.org>

Aeromedical Certification Update

Warren Silberman, DO, MPH

LIFE HAS BEEN HECTIC AND challenging during the October 1 changeover to the new Internet-based Airman Medical Certification System (AMCS), so I thought I would update you on several important items.

- By the end of November, more than 2,700 aviation medical examiners (AMEs) have transmitted over 45,000 FAA Form 8500-8s via the Internet version of AMCS. To those of you who have transmitted your examinations, I salute you! This compares with 1,310 AMEs who have ever used the previous DOS-based AMCS.
- There is still a significant number of AMEs who have not converted to the AMCS and are still sending in hard-copy examinations. From 25 October until 19 November, this amounted to nearly 9,000 examinations. This **will** cause delays in medical certification, since there are more data fields for our data entry people to key in, and it takes longer than in the past for them to input the exams to the AMCS. The regions and Aeromedical Certification Division will catch up with these AMEs!
- The majority of comments from the AMEs concerning the new process has been favorable. This includes those who used the old DOS-based system. We are aware that we cannot make everyone happy, but this is the right direction to take because a means of speeding up the medical certification process had to be found.

I am going to tell you all a short anecdote (to those of you who attended the recent AME seminar in Charleston, S.C., please bear with me). Back in 1989, after I received the great news of my being accepted into the USAF aerospace medicine residency program, I knew that I would need to write many papers. Being of the "old paper school" (those individuals who like to be able to pick up a piece of that white stuff with or without lines) and cheap, I talked myself into purchasing a word processor/typewriter. I taught myself how to use it and took it with me to San Antonio, Texas. For those of you who made the jump right away into the computer age, this machine can switch from a word processor that uses a memory disk (but not one that fits into any computer) and typewriter. It has a small digital screen. The University of Texas Health Sciences Center, where I studied for my Masters in Public Health, had computers that students could use, but I lived a ways from there and did not take full advantage of this availability. Several of my RAM (Resident in Aerospace Medicine) classmates had already made the jump, and I heard and saw the great and efficient things that this new contraption the "home computer" could do. But I had my word processor.

All went fairly well until the day I "saw the light." It was Thanksgiving weekend, 1990, and we were going to have my RAM brethren over for a get together. I had spent the entire day typing a paper that was due. My wife was out in the kitchen and heard a loud scream come from the bedroom office where I was working. Well, with one wayward peck of my finger, I had erased the entire paper and ended up spending the wee hours of the night retyping the thing. The next day I went to the Post Exchange and purchased my first computer, and I haven't looked back since! The moral to this story: Don't be leery of new computer technology—it's efficient, productive, and a real time-saver.

128-bit Encryption

Some AMEs have had problems with loading the 128 bit encryption software on their computers. If you are having difficulty with loading, please use the hyperlink to the Netscape or Microsoft Internet Explorer Websites, or call our people on the Hotline. (Dr. **William Collins**, our CAMI Director, has graciously obtained more help to assist us with the letters for the usernames and passwords.)

Hotline

A help line is available from 0700 until 1730 to provide you with technical support for the Internet-based Airman Medical Certification System. It is not for certification issues. Folks, our exceptional people on the Hotline are there to assist you and really do want to help. Please be civil to them. If we had an unlimited budget, I would have a bank of operators to assist you and stay open 24 hours a day. If the Hotline is busy, it has a voice mail feature so you can leave your phone number for a call-back. If you call and get in after you have already left a voice mail message, please let them know, and you won't have to receive a redundant phone call. The Hotline number is (405) 954-3238.

E-mail

Note that we have an E-mail address, which is

9-amc-aam-certification@mmacmail.jccbi.gov

The direct link to it is located at the bottom of the page before you click on the LOGIN. The Hotline people attempt to answer all messages.

Continued...

Dr. Silberman manages the Civil Aeromedical Institute's Aeromedical Certification Division.

Updates & FAQs

To those of you who have placed a bookmark directly to the Login site, also make one to the page that has Updates. We are trying to let you know of server problems, when the system will be inaccessible during internal upgrades, and solutions to common problems (frequently-asked questions, FAQ's) that AMEs are having. Look at this area, at least first thing in the morning, as well as if you notice some problems. There are going to be some hardware enhancements in the very near future.

Your Regional Flight Surgeon

I do not want you to underestimate the benefits that can be gained by utilizing your regional flight surgeon's office. Please call them first if you have any medical certification question. Recall that they have the same regulatory powers for their FAA region as we have nationally. They also may be able to answer some questions about the computer system.

Major Misunderstandings

I'd like to reinforce some guidelines that I thought you all would have known by reading the materials we have provided, but from the forms we have been receiving, obviously not all have done the reading.

- Please do not send us all three copies of the 8500-8. Send us just the first copy. The second copy is your working copy, and the third is the airman's copy.
- Recall you do not have to type the physical exam side of the form or even fill it out. You **must** have the airman both fill out the front side and sign the form (block 20). Please write or stamp the word *TRANS* at the top right hand corner of the front side of the 8500-8 to indicate that you have transmitted the exam. This simple act saves us a great deal of time in processing exam forms.

Watch Block 62

The computer people who developed this system had set the default in block 62 to *Certificate Deferred,* instead of leaving it blank and letting you click on the appropriate box. This is **not** to imply that you are to defer the airman's exam to AMCD. You are to select the appropriate box. This error will be corrected in the very near future. Also, upon completion of the examination, you can issue the medical certificate as you have always done, provided the airman has no disqualifying illnesses.

Batching Exams for Transmission

Those of you that used the old DOS-based AMCS system know that you could "batch" your exams. This meant that an AME could hold several examinations in computer memory and send them in all at once. This is a feature of a software type system. The Internet does not allow this. However, you can perform a form of batching with the new system, too. This is advantageous for those AMEs who like to review their exams prior to submission. When you reach page 7 of the Internet Version, you will see three buttons: PREVIOUS PAGE, FINISH, and LOGOUT. If you click the FINISH button, the exam is submitted. We plan on changing this button to read *SEND*. If you click the LOGOUT button instead, you will be logged out, and the examination will remain in a pending status for 14 days. Using your Username and Password, you can pull up each exam, read it over, and then click FINISH to send.

Tracking System

Another important issue is that prior to the present computer system, we had a way of tracking records as they were routed about the Division. That system has not been updated since September 10th because we have been busy developing a new tracking system. Also, we are eagerly waiting the merging of the 1 million records stored in the old AMCS with our new Document Imaging and Workflow System. These two accomplishments will help us find records.

Please tell your airmen, if you issued them a medical certificate, to enjoy their flying. If you deferred the determination of medical certification to the Aeromedical Certification Division, we are working those cases on a priority basis. If airmen call to find out the status of our determinations and we must pull their case out of the queue, this act will delay the certification process for them. So ask them to be patient with us while we upgrade the system. If they have not heard anything from us within 45 days, they can try to check with us.

Medications Update

Now, let's change the subject to some actual medical certification issues. Please note that we are now granting medical certification to individuals who have been placed on the Cox II inhibitors Celebrex and Viox. The Food and Drug Administration approved Celebrex a year ago, which is the time interval that we wait to see if there would be any side-effects affecting aviation safety.

Miripex is a second-line drug for Parkinson's Disease in those individuals who fail Sinemet. The major issue in granting medical certification in Parkinsonism should be the level of the disease: the severity of the symptoms and the airman's ability to perform in the cockpit. *Miripex* has been associated with some individuals suddenly falling asleep. This untoward event has occurred while individuals were driving an automobile and has resulted in accidents. It occurs suddenly and, reportedly, with no prior warning of sleepiness. Obviously, this side-effect is a contraindication to flying, and from now on, persons using the medication will be denied.

Well, I trust this will help you to provide better service to your airmen. Please bear with us during this transition period. I shall try to keep you informed.

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An Airman with Tuberculous Uveitis

Case Report, by Robert Haddon, MD

Abstract: *Tuberculosis is endemic, with nearly 2 billion carriers worldwide. Aviation medical examiners should be alert to both its pulmonary and extrapulmonary manifestations, especially in the international traveler. Uveitis is a rare presentation of tuberculosis, but that diagnosis must be considered in the differential, even in the absence of pulmonary disease. Promptly treated, tuberculosis should not interfere with the resumption of a career in aviation, and does not generally require special follow up.*

In the context of medical certification of airmen, uveitis is significant both as a threat to vision and as a clue to underlying illness. This case provides an opportunity to address both the management of uveitis and several aspects of tuberculosis screening and management in the flight environment. Specifically, skin testing, treatment, and follow up will be discussed.

A 34 year-old airman in the USAF Reserve applied in 1998 for renewal of his first-class medical certificate, noting a "past history of uveitis, left eye, resolved 3 years ago." Further investigation revealed that he had been found to have a newly positive tuberculin reaction in June 1994. At that time, he had no weight loss, a normal lung exam, and his chest radiograph was normal. However, slit lamp examination found evidence of uveitis, which was diagnosed as "miliary." He was treated with a course of Isoniazid and Rifampin for 6 mo, with resolution of the uveitis and with a persistently normal chest radiograph and absence of constitutional symptoms. He received a full medical waiver in August 1995 and retained a normal eye exam in April 1998. His first-class certificate was subsequently renewed.

The uvea is the layer of the eye that is deep to the sclera. It is highly vascular, and is comprised of the iris, ciliary body, and the choroid. Uveitis refers to the inflammation of any of these structures of the uveal tract. If untreated, it may result in total vision loss in the affected eye. Uveitis may result from a variety of traumatic, infectious, and inflammatory processes. It may be overt or subtle, and it may present a diagnostic dilemma.

Uveitis presents in 2 broad anatomic categories, anterior and posterior. Anterior uveitis includes inflammation of the iris and the ciliary body. Anterior uveitis is usually painful, with redness, miosis, and photophobia; the red, painful eye warrants immediate ophthalmologic evaluation. Further signs and symptoms of anterior uveitis include hazy vision and floaters that correlate on slit lamp exam with suspended inflammatory cells in the anterior chamber. Exudative iritis may change the color and texture of the iris. Iritis with copious exudate may produce an easily observed inflammatory fluid level (hypopyon) in the anterior chamber.

Posterior uveitis is a condition that involves the chorion. In contrast to anterior uveitis, posterior uveitis is generally painless and gradual in onset, but is equally dangerous to vision. Visual change is the chief symptom. Posterior uveitis is usually caused by autoimmune conditions such as sarcoidosis. However, it may also be viral, bacterial, fungal, or parasitic in origin and may be a signal of systemic immunosuppression. It presents with compromised vision and retinal lesions.

Tuberculosis of the eye resists convenient diagnostic compartmentalization. Currently rare, there is an extensive literature on its manifestations from the earlier part of this century. Its clinical spectrum may range from a diffuse, low-intensity uveitis to frank granuloma formation. Classic nodules will be found in a small minority of cases. Uveitis never represents the primary focus of infection. It can be seen in the setting of disseminated miliary tuberculosis, but it is usually a smoldering, localized process with allergic components in individuals who appear otherwise well (1).

The airman's uveitis, in this case, was a typical presentation of a rare condition, in that he had a recent conversion of his tuberculin test with no pulmonary or constitutional symptoms and a negative chest radiograph. Further, because the clinical appearance may be so non-specific, treatment with anti-tuberculous antibiotics represents a diagnostic tool as well as a treatment.

Management Issues

In recent years, incidents of tuberculosis transmission aboard commercial aircraft have been considered. However, the most common dilemma that AMEs will face is that of an asymptomatic pilot with a newly positive skin tuberculin test. The definition of a positive test varies with the circumstances and medical condition of the individual patient (2). The majority of individuals exposed to *M. tuberculosis* do not develop clinical disease. However, a large fraction of them sequester small numbers of dormant bacteria in their bodies, often for decades, that have the capacity to cause disease years later. Prophylactic treatment of those with skin-test conversion has been shown to decrease the recurrence of disease.

Dr. Haddon is a Clinical Associate with The Cleveland Clinic Foundation's Department of Emergency Medicine, is boarded in internal medicine and infectious diseases. He was on a clinical rotation at the Civil Aeromedical Institute when he wrote this article.

The current standard of care for routine prophylaxis is a course of Isoniazid 300mg. daily for 6 mo.

The issue of drug resistance underlies the differences between prophylactic therapy with one drug and treatment of active disease with as many as 4. *M. tuberculosis* undergoes spontaneous mutations producing resistance to antibiotics. These mutations occur at the rate of between 1 per 100,000 to 1 per 100,000,000 replications. In active, cavitary disease, the organism count may be in the hundreds of billions, and the presence of organisms resistant to one antibiotic becomes a statistical certainty. If one antibiotic is used in this setting, Darwinian selection eliminates all but the resistant few, which multiply and ultimately replace the original population of organisms. For this reason, treatment of active disease requires more than one drug. Further, because of the spread of drug-resistant TB, all bacteria present may already be resistant to one of the drugs applied. What appears to be 2-drug therapy may be, in effect, monotherapy, thereby setting up the patient for the development of resistance to the second drug as well. Regimens including 3 or 4 drugs at the outset, properly followed, are the best tool for avoiding the production of resistant bacteria in the setting of clinical disease.

In contrast, the person with only a newly positive skin test and no clinical disease may be harboring, at most, a few thousand bacteria. Since the rate of spontaneous resistance mutations is much smaller than the number of organisms present, it is statistically likely that all bacteria present will be susceptible to one drug, such as isoniazid. Prophylaxis represents the sterilization of that small number of bacteria and may safely be accomplished with isoniazid alone.

It is worth emphasizing that, for some airmen, the place where the exposure occurred could have been anywhere in the world. An accurate estimate of the risk of drug resistance must include a travel history.

For the airman, the issue of visual changes with ethambutol is of some concern.

Retrobulbar neuritis may cause red-green color blindness and blurring of vision. The incidence is less than 1%, and permanent deficits in visual acuity may be avoided by cessation of the drug with the onset of symptoms.

The other major side effect with bearing on aviation is isoniazid's potential for causing peripheral neuropathy. Again this is rare at normal treatment doses, and can be avoided entirely by co-administration of pyridoxine (vitamin B6). More commonly, isoniazid causes a metabolic hepatitis at a frequency of less than 2% in this pilot's age group.

It is not likely that the airman was exposed to TB in the flight environment itself, although cases of transmission in flight have been considered (3,4). It is more likely that exposure occurred while traveling or on station in an area of high tuberculosis prevalence. It is, therefore, important to obtain a travel history from the airman to better estimate the risk of exposure to resistant *M. tuberculosis.* Because of the worldwide association of tuberculosis with AIDS, it is essential to identify HIV risk factors in the history of any patient with a recent exposure to tuberculosis. Because airman may well be reluctant to reveal such information, it is worth making clear to them that it has bearing on the successful treatment of the tuberculosis.

It is unlikely that this airman exposed anyone else to tuberculosis, because his disease was extra-pulmonary, with a clear chest radiograph and a negative sputum culture. For the airman with active pulmonary disease, a series of 3 negative sputum cultures is a reasonable requirement prior to return to the flight environment, although for medical certification, attention must also be given to the resolution of any performance deficits that may have been inflicted by the illness.

Tuberculosis is endemic, with nearly 2 billion carriers worldwide. Aviation medical examiners should be alert to both its pulmonary and extrapulmonary manifestations, especially in the international traveler. Promptly treated, tuberculosis should not interfere with the resumption of a career in aviation, nor does it require special follow up unless there is immunosuppression, extensive structural lung damage, or a slow response to therapy. Uveitis is a rare presentation of tuberculosis, but that diagnosis must be considered in the differential, even in the absence of pulmonary disease.

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Office of Aviation Medicine *NEWS*

Southern Region Flight Surgeon A Winner (Twice)

by Shiela D. Gibson

Dr. Millett

Dr. **David P. Millett**, Southern Regional Flight Surgeon, was selected as Employee of the Year at the Southern Region's awards ceremony on December 16. Less than three months earlier, he was presented with the Employee of the Quarter award.

Millett was cited for "bringing to the FAA in Southern Region, the finest of workplace manager models. He epitomizes the goal and commitment to the Model Work Environment Plan. His division is one of wholesome workplace productivity, in addition to providing promotional and developmental opportunities for his employees."

Medical Division employees say he is the type of manager every employee would like to work for because "he brings out the best in you by providing training equipment and opportunities to help do the best job possible, then always acknowledges the hard work you put into your job."

Upon acceptance of his award, Dr. Millett shared the honor with his staff by recognizing and thanking them for their hard work and dedication to the safety mission of the FAA Office of Aviation Medicine.

Shiela Gibson is a program analyst in the Southern Region's Medical Division.

International Aviation Medicine Conferences Held in S. America

Physicians from the Federal Aviation Administration's Office of Aviation Medicine were invited to lecture in 1999 at international conferences held in Ecuador, Mexico, and Colombia. Participating from the Civil Aeromedical Institute were: Dr. **Melchor Antuñano**, manager the Aeromedical Education Division, Dr. **Stephen Carpenter**, manager of the Medical Appeals Branch; and Dr. **Stephen Véronneau**, Team Leader, Accident Investigation Research Team; and from the FAA Southwest Region, Regional Flight Surgeon Dr. **Guillermo Salazar**. Reported on earlier was an aviation medical examiner conference held in Macau.

Equador Conference

The Aeronautic Medicine Division of Ecuador's Civil Aviation Administration (CAA) organized the 2nd International Congress of Aerospace Medicine in the city of Quito. The CAA extended an official invitation (expenses paid) to Drs. Antuñano, Salazar, and Véronneau to participate in this conference.

Mexico Conference

The Mexican Association of Aviation Medicine organized the XVI International Conference in Aerospace Medicine in Ixtapa-Zihuatanejo, Mexico. This scientific event included a pre-conference seminar entitled "Operational Aviation Medicine, Human Factors and Flight Safety." The Mexican Association of Aviation Medicine invited Dr. Antuñano and Dr. Salazar to participate as lecturers and panel chairs.

Dr. Salazar delivering a lecture in Mexico.

Tri-National Conference

Also meeting in Mexico was the Tri-National Human Factors Working Group, comprised of members from the US, Mexico, and Canada. The group meets periodically to foster international cooperation in human factors accident investigation research and aviation safety. Representing the US were Drs. Véronneau and Antuñano.

Continued ➢

The key focal points of the Tri-National Human Factors Working Group meeting in Mexico (L-R): Dr. Véronneau; Capt. P.A. Alfonso Jones Kleinert, Director General, Mexico Civil Aeronautics; and Jim McMenemy, Transport Canada.

CAMI Safety Specialist Retires

You may have seen him on the Evening News describing how you can prepare for a possible emergency evacuation while aboard your next commercial flight. Or, maybe you were fortunate enough to learn firsthand by taking the Aircraft Passenger Emergency Evacuation course at the Civil Aeromedical Institute (CAMI) as you were learning to become an aviation medical examiner.

Charles Chittum

Charles Chittum, the popular safety course's designer and instructor since 1987, is retiring after a 16-year career at CAMI in which he championed the cause of preparedness to more than 20,000 aviation "consumers."

Members of the media discovered that the aviation public, traveling by airliners in increasing numbers, is very interested in "what if" scenarios in the event of a survivable crash-landing. Chittum described to reporters some practical lessons that could save injuries and even death—the best places to sit in a commercial aircraft and how to quickly and safely evacuate a smoke-filled aircraft on the ground. He has been featured in more than 75 local, national, and international television programs dealing with aircraft passenger safety issues.

Some of Chittum's accomplishments during his CAMI career include remodeling and renovating the Aircraft Cabin Evacuation Facility (ACEF), overhauling the hydraulics, and rewiring the electrical and emergency lighting systems.

He also worked on airline passenger safety research projects: emergency lighting systems used in clear air and smoke, evacuations using emergency slides, protective breathing with smoke hoods, evacuations through Type-III overwing exits, carry-on-luggage, and evacuating aircraft with infants.

Chittum figures he has taught emergency egress to more than 5,000 active duty-military personnel and has briefed more than 21,000 people on aircraft passenger safety in the ACEF. In recognition of his service to the aviation community, he received the Federal Air Surgeon's Outstanding Customer Service Award in 1996.

CAMI Employee of the Year

Rick Butler, an electronic technician and digital content producer with the Biodynamics Group at the Civil Aeromedical Institute (CAMI) for the last ten years, was chosen as the 1999 CAMI Employee of the Year. Butler was cited for his innovations and cooperative attitude of searching for ways to help others at the Institute.

Associate Fellows

The Aviation, Space, and Environmental Medicine Executive Committee announced the selection of 34 associate members, five of whom are Office of Aviation Medicine (OAM) employees.

Congratulations to the new associates. Listed here are those from OAM:

Douglas R. Burnett, Drs. Charles A. DeJohn, Nicholas M. Lomangino, Thomas E. Nesthus, and **O. Veronika Prinzo.**

Remembering Sherrod Anderson

by Robert S. Poole, MD

Dr. Anderson

Sherrod V. Anderson, MD, MPH., died on October 23, 1999, after a protracted illness. He had served the Office of Aviation Medicine as the Federal Aviation Administration's medical review officer (MRO) since 1992. He spent much of his earlier years in the Pacific as a medical officer and Deputy Regional Flight Surgeon in Hawaii.

Prior to joining the FAA and during that time, he had become an expert on Southeast Asia tribal culture, accumulating a vast collection of tribal artifacts. He served as a consultant before joining the Office of Aviation Medicine in 1964 as a participant in the agency's residency program.

As an MRO, Dr. Anderson contributed immensely to the development and management of the agency's employee substance abuse program.

He is survived by his wife of 32 years, Mary Ann, and two sons, Aaron and Jon Erick. He will be missed.

Rest in Peace, Sherrod.

Dr. Poole manages the Medical Specialties Divisions at FAA Headquarters.

AME Survey Results

FOR THE PAST 2½ YEARS, we have asked aviation medical examiners attending Federal Aviation Administration periodic training seminars to complete a survey about their familiarity with and use of the *Federal Air Surgeon's Medical Bulletin.* More than 2,200 questionnaires were completed. We thank the respondents for their suggestions and intend to incorporate many of them—resources permitting—into our publication.

Here are the results of the survey.

1. Do your regularly read the Bulletin?

Yes: 92% **No: 8%**

2. Does your staff regularly read the Bulletin?

Yes: 22% **No: 78%**

3. Do you place the Bulletin where it is readily accessible to airmen?

Yes: 28% **No: 72%**

4. Is the information in the Bulletin useful to you as an AME?

Yes: 93% **No: 7%**

5. Is the frequency of publication appropriate?

Yes: 86% **No: 14%**
More Often: 83%
Less Often: 17%

6. What teatures do you regularly read? (see Figure 1).

7. How would you improve the quality of the Bulletin?

The top categories of importance to those who answered Question 7 (See summary, Figure 2):

√ **Provide more aeromedical certification case studies and examples in each *Bulletin***: "*Give more clinical examples of AME's and whether certificates should be issued*" (37%)

√ **More "How To" articles**: "*Include a tutorial article on a significant subject each issue*" (18%)

√ **Formatting issues**: "*Highlight and enhance important information*" (13%)

√ **Faster response with new regulations and issues**: "*The publication is not responsive to changes in rules and regulations; information is not disseminated quickly enough.*" (8%)

√ **Accident and incident reports**: "*More accident reports and related medical problems, if any*" (7%)

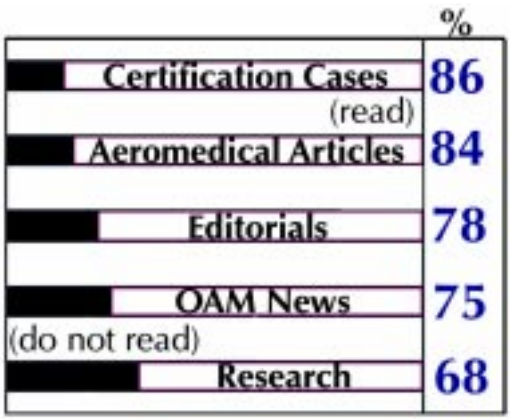

Figure 1. Features regularly perused by AMEs, with highest ranking for certification cases (86% indicated they read; 14% do not).

√ **Articles for pilots, office staff, and general interest**: "*More personal, pilot education articles*" (5%)

√ Quizzes, tests of knowledge: "*Put in a quiz, ask questions about the exam, the forms*" (4%)

√ **Internet issues**: Some were unaware of the existence of CAMI's Web site (4%)

√ **International section**: "*More information for international AMEs"* (4%)

8. How much do you charge for FAA physical exams? (See Table 1).

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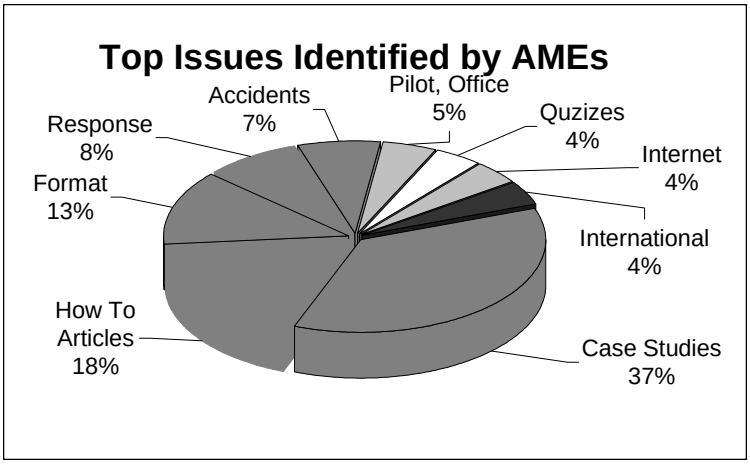

Figure 2. Answering Question 7, AMEs had preferences of how to improve the quality of the Bulletin.

Table 1. Fees charged by AMEs.

Type Service	Fee (average)	No. responding
1st Class exam	$74.50	1149
2nd Class exam	$66.38	1932
3rd Class exam	$63.41	1948
EKG transmittal	$66.88	143

AME TRAINING

REMINDER

Don't run out of FAA medical certification forms. It takes about three weeks to order and receive FAA Form 8500-8 (Application for Airman Medical Certificate or Airman Medical and Student Pilot Certificate), so be sure to monitor your inventory to maintain an adequate supply of these forms in your office.

The Office of Aviation Medicine recommends that you order these forms about six weeks ahead of depleting your inventory to allow for those unexpected surges in airman physicals, slow mail, and order backlog at the agency. A package with new forms (FF series) was recently distributed to all aviation medical examiners. To obtain additional forms, you must contact the Aeromedical Education Division at (405) 954-4831.

Aviation Medical Examiner Seminar Schedule 2000

January 14-16	**West Palm Beach, Fla.**	**AP/HF (2)**
March 20-24	**Oklahoma City, Okla.**	**Basic (1)**
April 28-30	**Washington, D.C.**	**CAR (2)**
May 15-18	**Houston, Texas**	**N/NP/P (3)**
May 31- June 2	**Anchorage, Alaska**	**(2)**
June 12-16	**Oklahoma City, Okla.**	**Basic (1)**
July 7-9	**Chicago, Ill.**	**AP/HF (2)**
August 7-11	**Oklahoma City, Okla.**	**Basic (1)**
September 8-10	**Reno, Nev.**	**OOE (2)**
October 27-29	**Kansas City, Mo.**	**CAR (2)**
December 4-8	**Oklahoma City, Okla.**	**Basic (1)**

CODES

AP/HF --- Aviation Physiology/Human Factors Theme

CAR ------ Cardiology Theme

OOE------ Ophthalmology - Otolaryngology - Endocrinology Theme

N/NP/P - Neurology/Neuro-Psychology/Psychiatry Theme

(1) **A 4½-day basic AME seminar focused on preparing physicians to be designated as aviation medical examiners.** Call your regional flight surgeon.

(2) **A 2½-day theme AME seminar consisting of 12 hours of aviation medical examiner-specific subjects plus 8 hours of subjects related to a designated theme.** Registration must be made through the Oklahoma City AME Programs Branch, **(405) 954-4830, or -4258.**

(3) **A 3½-day theme AME seminar held in conjunction with the Aerospace Medical Association (AsMA).** Registration must be made through AsMA **at (703) 739-2240.**

The Civil Aeromedical Institute is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

NEW CLINICAL REVIEW COURSE

Doug Burnett

The new multimedia Clinical Aerospace Physiology Review for aviation medical examiners (AMEs) is now available to AMEs to increase their knowledge of aviation physiology and their ability to assist airmen who present with symptoms of aviation-related sickness. This course is self-administered through the use of computer-based instructional materials and is offered on a voluntary basis. There is no fee for the course and course materials.

For those familiar with the Multimedia AME Refresher Course (MAMERC), the new course is identical in format and administrative procedure. It can be taken in computer or correspondence text form, can be completed in one session or progressively over a period of time.

The course includes a videotape with 30 scenarios portraying airmen who have been affected by hypoxia, spatial disorientation, G-forces, and other altitude and motion-related phenomena. Pre-testing and instruction are completed by computer or written programmed instructional text.

Correct responses to pre-test questions result in effectively "testing out" of a portion of the course, or the entire course if all responses are correct.

The Civil Aeromedical Institute's Aeromedical Education Division designates this continuing medical education activity for up to seven credit hours in Category 1 of the AMA Physician's Recognition Award, for up to seven credit hours in Category 1-A of the American Osteopathic Association and seven credit hours by the American Academy of Family Physicians.

Beginning in January 2000, the course will replace a portion of the current curriculum of the Basic AME seminar for new aviation medical examiners.

Doug Burnett is the team manager of the Civil Aeromedical Institute's aviation medical examiner program.

Just About Everything You Need to Know About

FIBER in Your Diet

by Glenn R. Stoutt, Jr., MD, Senior FAA Aviation Medical Examiner

THE SUBJECT OF DIETARY FIBER sounds about as dull as flossing your teeth, judging an accordion competition, or updating your Jeppesen charts. But, fiber is the bedrock of all good nutrition.

The perfect diet: To meet the dietary guidelines for Americans, the U.S. Department of Agriculture and the Department of Health and Human Services recommended that *most of the calories come from whole grain products, fresh fruits and vegetables, lowfat milk products, lean meats, fish, poultry, and dry beans. Fewer calories should come from fats and sweets.*

This classic diet contains lots of fiber, a substance found only in *plant foods,* and is mostly indigestible. The majority of our fiber should come from whole-grain breads and cereals, beans, peas, and fresh vegetables and fruits. Every item in this perfect diet can be found in a supermarket.

There are two types of fiber, classified by whether they dissolve in water: soluble fiber (such as oatmeal) and insoluble fiber (such as All-Bran). The average American diet contains 10 grams or less of fiber, but we need at least **25-30 grams per day** for optimum health.

What are the benefits of fiber?

√ Blood sugar regulation

Soluble fiber allows a slow, gradual absorption of sugar from the intestines, preventing jolting highs and lows of the blood glucose level. Helps prevent maturity-onset diabetes and is an essential part in the management of diabetes.

√ Obesity control

High fiber diets help you feel full, slow the emptying of your stomach, and contain fewer calories. *High fiber diets make you full, not fat.* Controlling obesity reduces the incidence of cancer, heart disease, stroke, diabetes, and high blood pressure.

√ Cancer prevention

High fiber diets reduce the risk of cancer of the breast, bladder, and prostate. The *International Journal of Cancer* (April 12, 1999) reaffirmed the reduced incidence of cancer of the colon and rectum associated with a high fiber diet. Soluble fiber soaks up water and makes stools bulky, causing carcinogens, bile acids, and cholesterol to pass rapidly through the intestines.

√ Less constipation, diverticular disease, irritable bowel syndrome, and hemorrhoids

Soft, formed stools solve the problem of constipation ("irregularity" is a wuss word). You are getting enough fiber if your stools float. (Easier gauge than counting fiber grams.) Fiber adds lots of water to hard stools, making them softer, lighter, and much easier to pass. Irritants, wastes, toxins, and carcinogens (cancer-inducing agents) have less time in contact with the intestinal wall.

√ Cholesterol reduction

This is one of the most important effects of a high fiber diet. Cholesterol is an ingredient of bile, which is used in the digestion of certain foods. A large portion of bile (bile acids) is excreted in the intestines and then reabsorbed to make more cholesterol. Soluble fiber sops up these bile acids and then excretes them in the stool. This can—with a decrease in dietary saturated fat—significantly reduce elevated cholesterol levels.

The best way to increase fiber is to *make plant foods the foundation of your diet*. A good source of fiber contains at least two grams per serving. Most packaged foods indicate the amount of fiber on the label. Plant foods usually have both kinds of fiber, but here are some of the important ones of the soluble and insoluble type:

Soluble fiber: *Beans and oatmeal head the list*. Other good sources are prunes, peas, rice bran, corn, apple pulp, bananas, pears, citrus fruits, carrots, strawberries, raspberries, and blueberries. Soluble fiber absorbs many times its weight in water and forms a viscous paste-like substance,

Dr. Stoutt is a partner in the Springs Pediatrics and Aviation Medicine Clinic, Louisville, Ky., and he has been an active AME since 1960. No longer an active pilot, he once held a commercial pilot's license with instrument, multiengine, and CFI ratings.

making a great "mop" for clearing cholesterol-producing substances from the stool.

Insoluble fiber*: Wheat bran and whole-grain cereals and breads are the mainstays.* Also included are most leafy

vegetables (such as lettuce, spinach, and cabbage), apple skins, beets, carrots, cauliflower, Brussels sprouts, broccoli, turnips, beans, and peas. (As you can see, there is some overlap, as most plant foods contain both soluble and insoluble fiber—beans being the main one.) Insoluble fiber softens stools.

In planning your lifetime diet, stick to the **fundamentals** recommended by all the respected health organizations. Avoid quack diets and fad diet books. (Three of the current books recommend: 1. Nothing but cabbage soup, 2. Special foods according to your blood type, and 3. Certain foods at different times of the day.) Go figure.

Yours for good health and safe flying,

Glenn Stoutt

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Note: The views and recommendations made in this article are those of the author and not necessarily those of the Federal Aviation Administration.

FIBER FACTOIDS

- High fiber foods are naturally low in fat and cholesterol.
- Instead of fruit juice, eat the whole fresh fruit, including thin skins and pulp.
- It's very important to increase your fiber intake gradually to avoid bloating, gas, and abdominal discomfort—go slowly.
- You absolutely must drink plenty of water; fiber soaks up loads of it. Avoid "sludge" in your intestinal tract!
- Canned beans produce less gas, but are often loaded with salt. People with high blood pressure who are sensitive to salt should read all labels carefully and avoid foods with high sodium.
- One serving of All-Bran supplies almost half the daily requirement of fiber.
- Read labels carefully. "Organic" or "natural" really mean nothing, as all foods are both organic and natural. "Lite" and "light" also mean nothing. "Reduced fat" may only mean that some of the fat has been replaced with sugar. "No fat" could be a label for a bowl of pure sugar. Also, read the portion sizes. Some foods are so high in fat, sugar, or salt that the portion recommended may be only a tiny amount. (Called portion distortion.)
- No laxatives are ever needed if you are on a high fiber diet.
- Get your fiber from foods, not from concentrates sold in the pharmacy. Foods contain not only fat, protein, carbohydrate, and fiber, but also *micronutrients* such as vitamins, minerals, and hundreds of *phytochemicals* (from "phyto," meaning plant) necessary for good nutrition and health.

FEDERAL AIR SURGEON'S MEDICAL BULLETIN 1999 INDEX OF STORIES

A Reference Guide to Articles Published in 1999